

IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

Claims 1-14 (Canceled).

15. (New) A base station apparatus that performs downlink packet transmission using an adaptive array, said base station apparatus comprising:

a priority determiner that determines individual priorities of a plurality of communication terminal apparatuses in communication based on downlink channel quality;

a transmission destination determiner that determines a plurality of communication terminal apparatuses having less interference with each other than a predetermined level, including a communication terminal apparatus having a highest priority;

a modulation system determiner that determines a packet signal modulation system based on the downlink channel quality;

a directivity transmitter that modulates a packet signal by the modulation system determined in the modulation system determiner and transmits the modulated packet signal with

directivity to the communication terminal apparatuses determined in the transmission destination determiner.

16. (New) The base station apparatus according to claim 15, wherein the transmission destination determiner first selects the communication terminal apparatus having the highest priority and then selects a communication terminal apparatus having the highest priority among the remaining determined plurality of communication terminal apparatuses, excluding ones affected by the packet signal, sent to the first selected communication terminal apparatus, by more than a predetermined level.

17. (New) The base station apparatus according to claim 15, wherein:

the directivity transmitter divides the determined plurality of communication terminal apparatuses into several groups and implements the transmission by forming the directivity on a per group basis, and

the transmission destination determiner selects in each group a communication terminal apparatus having the highest priority.

18. (New) The base station apparatus according to claim 15, wherein the modulation system determiner adopts a higher rate modulation system as the channel quality of the downlink increases.

19. (New) The base station apparatus according to claim 15, further comprising:

a density calculator that calculates a density in a peripheral area of a communication terminal apparatus determined in the transmission destination determiner; and

a directivity width controller that controls a directivity width based on the modulation system and the density, wherein

the modulation system determiner additionally determines the packet signal modulation system based on the density, and the directivity transmitter implements the transmission in accordance with the control provided by said directivity width controller.

20. (New) The base station apparatus according to claim 19, wherein the modulation system determiner adopts a higher rate modulation system as the density calculated by the density calculator decreases.

21. (New) The base station apparatus according to claim 19, wherein the directivity width controller controls the directivity width so that the directivity width becomes narrower for a higher rate modulation system.

22. (New) The base station apparatus according to claim 19, wherein the directivity width controller controls the directivity width so that the directivity width becomes narrower as the density calculated by the density calculator increases.

23. (New) The base station apparatus according to claim 19, further comprising:

a speed detector that detects a speed of a communication terminal apparatus determined in the transmission destination determiner, wherein

the modulation system determiner additionally determines the packet signal modulation system based on the speed and the directivity width controller additionally controls the directivity width based on the speed.

24. (New) The base station apparatus according to claim 23, wherein the modulation system determiner adopts a lower rate

modulation system as the speed detected by the speed detector increases.

25. (New) The base station apparatus according to claim 23, wherein the directivity width controller controls the directivity width so that the directivity width becomes wider as the speed detected by the speed detector increases.

26. (New) A packet transmission method for a base station apparatus that performs packet transmission using an adaptive array, said method comprising:

(i) determining individual priorities of a plurality of communication terminal apparatuses in communication based on downlink channel quality;

(ii) determining a plurality of communication terminal apparatuses having less interference with each other than a predetermined level, including a communication terminal apparatus having a highest priority;

(iii) determining a packet signal modulation system based on the downlink channel quality;

(iv) modulating a packet signal by the modulation system determined in step (iii);

(v) transmitting the modulated packet signal with directivity to the communication terminal apparatuses determined in step (ii).